TACTICAL COMBAT CASUALTY CARE

RIFLES LIFESAVERS

Introduction

- The three goals of Tactical Combat Casualty Care (TCCC) are:
  - 1. Save preventable deaths
  - 2. Prevent additional casualties
  - 3. Complete the mission

Introduction

- This approach recognizes a particularly important principle:
  - To perform the *correct intervention* at the *correct time* in the continuum of combat care
  - A medically correct intervention performed at the *wrong time* in combat may lead to *further casualties*

Combat Deaths

- KIA: 31% Penetrating head trauma
- KIA: 25% Surgically uncorrectable torso trauma
- KIA: 10% Potentially surgically correctable trauma
- KIA: 9% Hemorrhage from extremity wounds
- KIA: 7% Mutilating blast trauma
- KIA: 5% Tension pneumothorax
- KIA: 1% Airway problems
- DOW: 12% Mostly from infections and complications of shock

PREVENTABLE CAUSES OF COMBAT DEATH

- 60% Hemorrhage from extremity wounds
- 33% Tension pneumothorax
- 6% Airway obstruction, e.g., maxillofacial trauma

Factors influencing combat casualty care

- Enemy Fire
- Medical Equipment Limitations
- Widely Variable Evacuation Time

STAGES OF CARE: 3 Distinct Phases

- Care Under Fire
- Tactical Field Care
- Combat Casualty Evacuation Care

Care Under Fire

- “Care under fire” is the care rendered by the medic or first responder at the scene of the injury while still under effective hostile fire
- Available medical equipment is limited to that carried by the medic or first responder in his aid bag

Tactical Field Care

- “Tactical Field Care” is the care rendered by the medic once no longer under effective hostile fire
- Also applies to situations in which an injury has occurred, but there has been no hostile fire
- Available medical equipment still limited to that carried into the field by medical personnel
- Time to evacuation may vary considerably

Combat Casualty Evacuation Care

- “Combat Casualty Evacuation Care” is the care rendered once the casualty has been picked up by evacuation vehicles
- Additional medical personnel and equipment may have been pre-staged and available at this stage of casualty management

Care Under Fire

Care Under Fire

- “The best medicine on any battlefield is fire superiority”
- Medical personnel’s firepower may be essential in obtaining tactical fire superiority
- Attention to suppression of hostile fire will minimize the risk of additional injuries or casualties

Care Under Fire

- Personnel may need to assist in returning fire instead of stopping to care for casualties
- Wounded soldiers who are unable to fight should lay flat and motionless if no cover is available or move as quickly as possible to any nearby cover

Care Under Fire

- No attention to airway at this point because of need to move casualty to cover quickly
- Control of hemorrhage is essential since injury to a major vessel can result in hypovolemic shock in a short time frame
- Over 2500 deaths occurred in Viet Nam secondary to hemorrhage from extremity wounds only

Care Under Fire

- Hemorrhage from extremities is the 1st leading cause of preventable combat deaths
- Prompt use of tourniquets to **stop the bleeding** may be life-saving in this phase

Tourniquets

Care Under Fire

- All soldiers engaged in combat missions should have a suitable tourniquet readily available at a standard location on their battle gear and be trained in its use
- Various types of tourniquets exist

Combat Application Tourniquet (CAT)

Care Under Fire

- Conventional litters may not be available for movement of casualties
- Consider alternate methods to move casualties such as a Talon II litter
- Smoke, CS, and vehicles may act as screens to assist in casualty movement
- Tanks have been used successfully as screens in OIF

KEY POINTS

- Return fire as directed or required
- If able, the casualty(s) should also return fire
- Try to keep from being shot
- Try to keep the casualty from sustaining additional wounds
- Airway management is best deferred until the Tactical Field Care phase
- Stop any life threatening hemorrhage with a tourniquet
- Reassure the casualty

Tactical Field Care

Tactical Field Care

- Reduced level of hazard from hostile fire or enemy action
- Increased time to provide care
- Available time to render care may vary considerably

Tactical Field Care

- In some cases, tactical field care may consist of rapid treatment of wounds with the expectation of a re-engagement of hostile fire at any moment
- In some circumstances there may be ample time to render whatever care is available in the field
- The time to evacuation may be quite variable from 30 minutes to several hours

Tactical Field Care

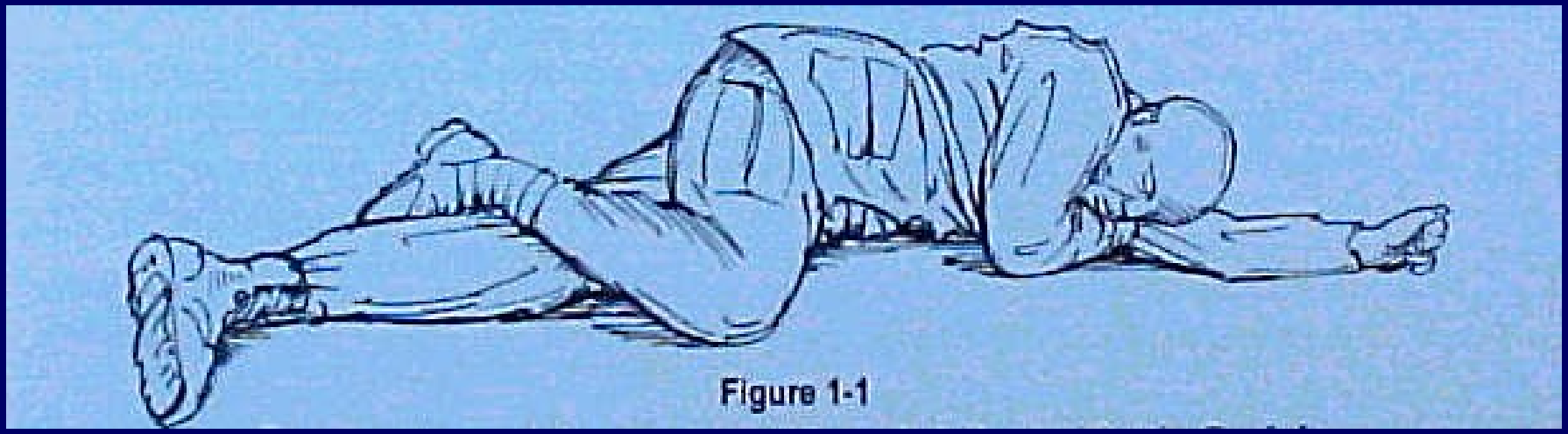
- If a victim of a blast or penetrating injury is found without a pulse, respirations, or other signs of life, **DO NOT** attempt CPR
- Casualties with confused mental status should be disarmed immediately of both weapons and grenades

Tactical Field Care

- Initial assessment is the ABCs
  - Airway
  - Breathing
  - Circulation

Tactical Field Care: Airway

- Open the airway with a chin-lift or jaw-thrust maneuver
- If unconscious and spontaneously breathing, insert a nasopharyngeal airway



Nasopharyngeal Airway

A survivable airway problem

Tactical Field Care: Breathing

- Traumatic chest wall defects should be closed quickly with an occlusive dressing without regard to venting one side of the dressing
- Also may use an “Asherman Chest Seal”
- Place the casualty in the sitting position if possible.

"Asherman Chest Seal"

Tactical Field Care: Breathing

- Progressive respiratory distress in the presence of unilateral penetrating chest trauma should be considered tension pneumothorax
- Tension pneumothorax is the 2nd leading cause of preventable death on the battlefield
- Cannot rely on typical signs such as shifting trachea, etc.
- Needle chest decompression is life-saving

Needle Chest Decompression

Tactical Field Care: Circulation

- Any bleeding site not previously controlled should now be addressed
- Only the absolute minimum of clothing should be removed, although a thorough search for additional injuries must be performed

Tactical Field Care: Circulation

- Significant bleeding should be controlled using a tourniquet as described previously
- Once the tactical situation permits, consideration may be given to loosening the tourniquet and using direct pressure or hemostatic dressings (HemCon) or hemostatic powder (QuikClot) to control any additional hemorrhage

Chitosan Hemostatic Dressing

- Apply directly to bleeding site and hold in place 2 minutes
- If dressing is not effective in stopping bleeding after 4 minutes, remove original and apply a new dressing
- Additional dressings cannot be applied over ineffective dressing
- Apply a battle dressing/bandage to secure hemostatic dressing in place
- Hemostatic dressings should only be removed by responsible persons after evacuation to the next level of care

Tactical Field Care: IV fluids

- **FIRST, STOP THE BLEEDING!**
- IV access should be obtained using a single 18-gauge catheter because of the ease of starting
- IV fluids should be started as soon as they are available in the OIF setting due to dehydration
- A saline lock may be used to control IV access in absence of IV fluids
- Ensure IV is not started distal to a significant wound

Saline Lock

Tactical Field Care: Additional injuries

- Splint fractures as circumstances allow while verifying pulse and prepare for evacuation
- Continually reevaluate casualties for changes in condition

CASEVAC Care

Casevac Care

- At some point in the operation the casualty will be evacuated
- Time to evacuation may be quite variable from minutes to hours
- The medic may be among the casualties or otherwise debilitated
- A MASCAL may exceed the capabilities of the medic

Casevac Care

- Higher level medical personnel may accompany the CASEVAC vehicle
- Additional medical equipment may be brought in with the CASEVAC asset, which may include
  - Electronic equipment for monitoring of the patient's blood pressure, pulse, and pulse oximetry
  - Oxygen is usually available during this phase

Summary

- There are three categories of casualties on the battlefield:
  1. Soldiers who will live regardless
  2. Soldiers who will die regardless
  3. Soldiers who will die from preventable deaths *unless* proper life-saving steps are taken immediately (7-15%)
     - This is the group of soldiers we can save with RLS (CLS enhanced) training

Summary

- “If during the next war you could do only two things, 1) place a tourniquet and 2) treat a tension pneumothorax, then you can probably save between 70 and 90 percent of all the *preventable deaths* on the battlefield.”

-COL Ron Bellamy

QUESTIONS?